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## NOTICE OF ALLOWANCE AND FEE(S) DUE

41505 7590 03/19/2010

WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)  
CIRA CENTRE, 12TH FLOOR  
2929 ARCH STREET  
PHILADELPHIA, PA 19104-2891

EXAMINER

NUNEZ, JORDANY

ART UNIT

PAPER NUMBER

2175

DATE MAILED: 03/19/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,824

11/26/2003

James P. Griesmer

MSFT-2789/303543.1

9275

TITLE OF INVENTION: ENHANCED DATA TIP SYSTEM AND METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	06/21/2010

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

41505 7590 03/19/2010

**WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)**  
CIRA CENTRE, 12TH FLOOR  
2929 ARCH STREET  
PHILADELPHIA, PA 19104-2891

## **Certificate of Mailing or Transmission**

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,824 11/26/2003 James P. Griesmer MSFT-2789/303543.1 9275

TITLE OF INVENTION: ENHANCED DATA TIP SYSTEM AND METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 06/21/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
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NUNEZ, JORDANY 2175 345-711000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_

3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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2929 ARCH STREET  
PHILADELPHIA, PA 19104-2891

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 547 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 547 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/723,824	GRIESMER, JAMES P.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jordany Núñez	2175	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/24/2009.
2. ☒ The allowed claim(s) is/are 8,12-15,17,18 and 21-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

/William L. Bashore/  
Supervisory Patent Examiner, Art Unit 2175

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### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph F. Oriti on 2/25/2010.

Claim 13 has been amended as follows:

13. (Currently Amended) A system for displaying an expansion tree of data tips related to an object displayed on a computer screen, the system comprising:

- a computer screen to display the object and the expansion tree of data tips;

- a processor for executing instructions corresponding to the method of:

- determining that a cursor is initially hovering over the object, wherein the object represents a variable incorporated into a line of program code;

- loading and evaluating the object to determine if the object:

- has a variable value associated with the variable; and

- has related data sub-items;

- if the related data sub-items are capable of expansion into lower-tier sub-items;

- assembling variable values for the object and the related data sub-items;

- displaying the variable values of the object in a parent data tip located adjacent to the cursor selected object; and

- determining that the cursor is next hovering over a first expansion widget indicator contained in the parent data tip, and automatically launching;

- a child data tip as an expansion data tip to the parent data tip, the child data tip window having a second expansion widget indicator associated with a first data sub-item contained inside the first child data tip; a third expansion widget indicator associated with a second data sub-item contained inside

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the first child data tip; and wherein upon determining that the cursor is hovering over one of the second or the third expansion widget indicators, a second child data tip is automatically launched as a part of the expansion tree of data tips; and

automatically dismissing the first child data tip upon determining that the cursor has been moved outside the first child data tip.

### REASONS FOR ALLOWANCE

When considered as a whole and in light of the specification, claims 8, 12-15, 17, 18, 21-33 are allowable over the art of record.

The following is an examiner's statement of reasons for allowance:

As to independent claim 8:

Thames et al. (US20030163801, hereinafter Thames) discloses a method of displaying related data sub-items corresponding to an object displayed on a computer screen, the method comprising:

determining that a cursor is positioned to point at the object on the computer screen, wherein the object represents a variable incorporated into a line of program code that is currently displayed on the computer screen (e.g., the symbol mac is mousedover) (page 43, paragraph [0668]);

evaluating the object to determine if the object:

has a variable value (e.g., determining what kind of expansion data to use for a symbol); and

has related data sub-items (e.g., has related macros);

assembling variable values for the object and the related data sub-items (e.g., assembling expansion data for each nested macro); and

generating an expansion tree of data tips incorporating an auto-expansion feature, the auto-expansion feature comprising:

displaying on the computer screen the values of the object in a parent data tip, the parent data tip containing a first (fig. 41D, el. 4130) expansion widget indicator (fig. 41D, el. 4133, 4134) of the related data sub-items (page 43, paragraphs [0669], [0670]);

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the expansion widget indicator automatically launching a first child data tip that is a part of the expansion tree of data tips, the first child data tip displaying the related data sub-items together with associated data values for each individual data sub-item (fig. 41D, el. 4140; page 43, paragraphs [0669], [0670]),

the parent and child data tip windows displayed simultaneously and overlaying at least a portion of the listing of the program code (fig. 41D, windows 4130 and 4140 overlay program code).

However, Thames does not teach determining that the cursor is initially hovering over the object on the computer screen, determining that the cursor is next hovering over the first expansion widget; and automatically dismissing the first child data tip upon determining that the cursor has been moved out of the first child data tip and is hovering inside the parent data tip.

The prior art of Vaidyanathan et al. (US6467081, hereinafter Vaidyanathan), teaches a drop down box being displayed by an automatic statement completion module, the drop down box displaying a list of valid tokens that can follow a pointer operation, a user moving a cursor down the drop down box, an automatic help module displaying a tool tip box next to a highlighted entry (col. 8, l. 50-59).

The prior art of Microsoft (Tiptoe Through Tooltips With our All-Encompassing ToolTip Programmer's Guide) teaches sub-item windows and using a symbol to indicate that lower-tier sub items exist and can be selected (page 2 and page 15) (e.g., "a single ToolTip can support multiple tools, which [...] may or may not be child windows" and "the TitleTip needs to be updated to reflect the selected item").

However, neither Vaidyanathan nor Microsoft teaches: automatically dismissing the first child data tip upon determining that the cursor has been moved out of the first child data tip and is hovering inside the data tip.

Further, Shulman et al. (US7322023) teaches an intelligent real time tool that assists computer programmer during maintenance of a computer program (abstract), and an informational assist window 740 (e.g., parent data tip window), a procedure call pop window 732 at a time T2 with a first argument value Smith already in place, pressing a comma commit key following the value Smith causing an update in the informational display assist window 740 so that the second argument 742 is highlighted to indicate

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the present location of the character position cursor 732 within the argument list, a selection menu assist window 850 (e.g., child data tip window) being generated and overlaid on the informational display assist window 740, the selection menu assist window 850 containing three menu items 851-853 that the programmer can choose from to complete programming language statement 740, the selection menu assist window 840 disappearing once a menu item is committed or the Escape key is pressed. However, Shulman does not teach automatically dismissing the first child data tip upon determining that the cursor has been moved out of the first child data tip and is hovering inside the data tip.

Further, Fukatsu et al. (US7296230, hereinafter Fukatsu) teaches a first pop-up display being displayed upon moving a mouse cursor upon a screen region with a linked destination (abstract), the pop-up display being configured to further display a child pop-up display upon moving a mouse cursor upon a region of the first pop-up display with a linked destination (figs. 14A-14C), and closing a pop-up display if a cursor has been moved somewhere else than the pop-up display (col. 19, l. 5-14). However, Fukatsu does not teach hovering over an object that represents a variable incorporated into a line of program code that is currently displayed on the computer screen, evaluating the object to determine if the object has a variable value, and has related data sub-items, assembling variable values for the object and the related data sub-items, and thus, one of ordinary skill in the art would not necessarily have combined Fukatsu's teachings with the previous art.

As to independent claim 13:

Thames et al. teaches a system for displaying data tips related to an object displayed on a computer screen, the system comprising:

a computer screen to display the object and the data tips (see figure 41D, el. 4131, for example);

a processor (inherent) for executing instructions corresponding to the method of:

determining that a cursor is positioned to point (e.g., mouseover), wherein the object represents a variable (e.g., symbol mac) incorporated into a line of program code (see page 43, paragraph [0669] for example);



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loading and evaluating the object to determine if the object:

has a variable value associated with the variable (e.g., tooltip data) (see page 43, paragraph [0669] for example);

has related data sub-items (e.g., macro can be fully expanded to show all the nested macro definitions, or it can be expanded by stages) (see page 43, paragraph [0670], [0671] for example) (e.g., this means that the system determines whether a macro has related nested macros, and those that would be fully expanded); and

if the related data sub-items are capable of expansion into lower-tier sub-items;

assembling variable values for the object and the related data sub-items (see page 43, paragraph [0670], [0671] for example); and

displaying the variable values of the object in a parent data tip window located adjacent to the object (see page 43, paragraph [0669], [0670], [0671] for example) (e.g., displaying the expanded macros next to the symbol mac);

displaying the related data sub-items in a child data tip window, wherein the object and the related data sub-items are related in a parent and child relationship (fig. 41D, el. 4140),

the child data tip window having an expansion widget indication of the lower-tier sub items if the lower-tier sub-items exist, determining that the cursor has been positioned upon the expansion widget indication (fig. 41D, el. 4133, 4134);

displaying an additional data tip window simultaneously with the parent and child data tip windows (page 42, paragraphs [0654], [0655]) (e.g., footnote annotations display footnote text whenever a mouseover occurred over punctuation symbols) ;

and wherein the first window and overlaying at least a portion of the listing of the program code (fig. 41D, el. 4140).

However, Thames does not teach: determining that a cursor is initially hovering over the object, determining that the cursor is next hovering over a first expansion widget indicator contained in the parent data tip, and automatically launching a child data tip as an expansion data tip to the parent data tip, the child data tip window having a second expansion widget indicator associated with a first data sub-item

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contained inside the first child data tip; a third expansion widget indicator associated with a second data sub-item contained inside the first child data tip; and wherein upon determining that the cursor is hovering over one of the second or the third expansion widget indicators, a second child data tip is automatically launched as a part of the expansion tree of data tips.

The prior art of Vaidyanathan et al. (US6467081, hereinafter Vaidyanathan), teaches a drop down box being displayed by an automatic statement completion module, the drop down box displaying a list of valid tokens that can follow a pointer operation, a user moving a cursor down the drop down box, an automatic help module displaying a tool tip box next to a highlighted entry (col. 8, l. 50-59).

The prior art of Microsoft (Tiptoe Through Tooltips With our All-Encompassing ToolTip Programmer's Guide) teaches sub-item windows and using a symbol to indicate that lower-tier sub items exist and can be selected (page 2 and page 15) (e.g., "a single ToolTip can support multiple tools, which [...] may or may not be child windows" and "the TitleTip needs to be updated to reflect the selected item").

Further, Shulman et al. (US7322023) teaches an intelligent real time tool that assists computer programmer during maintenance of a computer program (abstract), and an informational assist window 740 (e.g., parent data tip window), a procedure call pop window 732 at a time T2 with a first argument value Smith already in place, pressing a comma commit key following the value Smith causing an update in the informational display assist window 740 so that the second argument 742 is highlighted to indicate the present location of the character position cursor 732 within the argument list, a selection menu assist window 850 (e.g., child data tip window) being generated and overlaid on the informational display assist window 740, the selection menu assist window 850 containing three menu items 851-853 that the programmer can choose from to complete programming language statement 740, the selection menu assist window 840 disappearing once a menu item is committed or the Escape key is pressed. However, Shulman does not teach automatically dismissing the first child data tip upon determining that the cursor has been moved out of the first child data tip and is hovering inside the data tip.

Further, Fukatsu et al. (US7296230, hereinafter Fukatsu) teaches a first pop-up display being displayed upon moving a mouse cursor upon a screen region with a linked destination (abstract), the pop-up display being configured to further display a child pop-up display upon moving a mouse cursor upon a

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region of the first pop-up display with a linked destination (figs. 14A-14C), and closing a pop-up display if a cursor has been moved somewhere else than the pop-up display (col. 19, l. 5-14). However, Fukatsu does not teach hovering over an object that represents a variable incorporated into a line of program code that is currently displayed on the computer screen, evaluating the object to determine if the object has a variable value, and has related data sub-items, assembling variable values for the object and the related data sub-items, and thus, one of ordinary skill in the art would not necessarily have combined Fukatsu's teachings with the previous art.

However, neither Vaidyanathan nor Microsoft teaches: automatically dismissing the first child data tip upon determining that the cursor has been moved outside the first child data tip.

As to claim 18:

Thames teaches a machine-readable storage medium having instructions therein, executable by a machine to perform a method comprising:

determining that a cursor is positioned to point at the object, wherein the object represents a variable incorporated into a line of program code that is currently displayed on the computer screen (e.g., mouseover of the symbol referencing a path provides a tooltip with information) (page 43, paragraph [0668]);

loading the cursor-selected object (fig. 41D, el. 4131, the symbol "mac" is loaded before being displayed);

evaluating the object to determine if the object:

has a variable value associated with the variable;

has related data sub-items; and

if the related data sub-items are capable of expansion into lower-tier sub-items;

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assembling variable values for the object and the related data sub-items, wherein the selected object and the related data sub-items are related in a parent (fig. 41D, el. 4130) and child (fig. 41D, el. 4140) relationship (page 43, paragraphs [0669], [0670]); and

generating an expansion tree of data tips incorporating an auto-expansion feature, the auto-expansion feature comprising:

displaying on the computer screen the variable values of the object in a parent data tip, the parent data tip containing a first expansion widget indicator (fig. 41D, 4133, 4134) of the related data sub-items;

determining that the cursor is next position to point to the first expansion widget indicator, and automatically launching a first child data tip window (fig. 41D, 4140), that is a part of the expansion tree of data tips, the first child data tip including the lower-tier sub-items (page 43, paragraphs [0669], [0670]),

However, Thames does not teach: automatically dismissing the first child data tip upon determining that the cursor has been moved outside the first child data tip.

The prior art of Vaidyanathan et al. (US6467081, hereinafter Vaidyanathan), teaches a drop down box being displayed by an automatic statement completion module, the drop down box displaying a list of valid tokens that can follow a pointer operation, a user moving a cursor down the drop down box, an automatic help module displaying a tool tip box next to a highlighted entry (col. 8, l. 50-59).

The prior art of Microsoft (Tiptoe Through Tooltips With our All-Encompassing ToolTip Programmer's Guide) teaches sub-item windows and using a symbol to indicate that lower-tier sub items exist and can be selected (page 2 and page 15) (e.g., "a single ToolTip can support multiple tools, which [...] may or may not be child windows" and "the TitleTip needs to be updated to reflect the selected item").

However, neither Vaidyanathan nor Microsoft teaches: automatically dismissing the first child data tip upon determining that the cursor has been moved outside the first child data tip.

Further, Shulman et al. (US7322023) teaches an intelligent real time tool that assists computer programmer during maintenance of a computer program (abstract), and an informational assist window 740 (e.g., parent data tip window), a procedure call pop window 732 at a time T2 with a first argument

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value Smith already in place, pressing a comma commit key following the value Smith causing an update in the informational display assist window 740 so that the second argument 742 is highlighted to indicate the present location of the character position cursor 732 within the argument list, a selection menu assist window 850 (e.g., child data tip window) being generated and overlaid on the informational display assist window 740, the selection menu assist window 850 containing three menu items 851-853 that the programmer can choose from to complete programming language statement 740, the selection menu assist window 840 disappearing once a menu item is committed or the Escape key is pressed. However, Shulman does not teach automatically dismissing the first child data tip upon determining that the cursor has been moved out of the first child data tip and is hovering inside the data tip.

Further, Fukatsu et al. (US7296230, hereinafter Fukatsu) teaches a first pop-up display being displayed upon moving a mouse cursor upon a screen region with a linked destination (abstract), the pop-up display being configured to further display a child pop-up display upon moving a mouse cursor upon a region of the first pop-up display with a linked destination (figs. 14A-14C), and closing a pop-up display if a cursor has been moved somewhere else than the pop-up display (col. 19, l. 5-14). However, Fukatsu does not teach hovering over an object that represents a variable incorporated into a line of program code that is currently displayed on the computer screen, evaluating the object to determine if the object has a variable value, and has related data sub-items, assembling variable values for the object and the related data sub-items, and thus, one of ordinary skill in the art would not necessarily have combined Fukatsu's teachings with the previous art.

As to claim 21:

A computer-implemented method for indicating on a computer display, the values of variables in a software program, the computer-implemented method comprising:

displaying on the computer display, an expression that is a part of the software program, the expression containing a variable; detecting the positioning of a pointer upon the variable (e.g., the symbol mac is mousedover) (page 43, paragraph [0668]);

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displaying thereon, a first data tip window showing a first expanded version of the variable, the first expanded version showing at least one individual data element that defines the variable, together with a data value for the at least one individual data element (fig. 41D, el. 4130 );

detecting the positioning of the pointer upon an expansion widget (fig. 41D, el. 4133, 4134) contained in the first data tip (page 43, paragraph [0669], [0670]);

automatically displaying thereon, a child data tip with at least a portion of the child data tip overlapping the parent data tip, in an expansion tree of interactive data tips that occupies less visible area on the computer display than an equivalent number of watch windows (fig. 41D, windows 4130 and 4140 overlap).

However, Thames does not teach: automatically dismissing the first child data tip upon determining that the cursor has been moved outside the first child data tip.

The prior art of Vaidyanathan et al. (US6467081, hereinafter Vaidyanathan), teaches a drop down box being displayed by an automatic statement completion module, the drop down box displaying a list of valid tokens that can follow a pointer operation, a user moving a cursor down the drop down box, an automatic help module displaying a tool tip box next to a highlighted entry (col. 8, l. 50-59).

The prior art of Microsoft (Tiptoe Through Tooltips With our All-Encompassing ToolTip Programmer's Guide) teaches sub-item windows and using a symbol to indicate that lower-tier sub items exist and can be selected (page 2 and page 15) (e.g., "a single ToolTip can support multiple tools, which [...] may or may not be child windows" and "the TitleTip needs to be updated to reflect the selected item".

However, neither Vaidyanathan nor Microsoft teaches: automatically dismissing the first child data tip upon determining that the cursor has been moved outside the first child data tip.

Further, Shulman et al. (US7322023) teaches an intelligent real time tool that assists computer programmer during maintenance of a computer program (abstract), and an informational assist window 740 (e.g., parent data tip window), a procedure call pop window 732 at a time T2 with a first argument value Smith already in place, pressing a comma commit key following the value Smith causing an update in the informational display assist window 740 so that the second argument 742 is highlighted to indicate

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the present location of the character position cursor 732 within the argument list, a selection menu assist window 850 (e.g., child data tip window) being generated and overlaid on the informational display assist window 740, the selection menu assist window 850 containing three menu items 851-853 that the programmer can choose from to complete programming language statement 740, the selection menu assist window 840 disappearing once a menu item is committed or the Escape key is pressed. However, Shulman does not teach automatically dismissing the first child data tip upon determining that the cursor has been moved out of the first child data tip and is hovering inside the data tip.

Further, Fukatsu et al. (US7296230, hereinafter Fukatsu) teaches a first pop-up display being displayed upon moving a mouse cursor upon a screen region with a linked destination (abstract), the pop-up display being configured to further display a child pop-up display upon moving a mouse cursor upon a region of the first pop-up display with a linked destination (figs. 14A-14C), and closing a pop-up display if a cursor has been moved somewhere else than the pop-up display (col. 19, l. 5-14). However, Fukatsu does not teach hovering over an object that represents a variable incorporated into a line of program code that is currently displayed on the computer screen, evaluating the object to determine if the object has a variable value, and has related data sub-items, assembling variable values for the object and the related data sub-items, and thus, one of ordinary skill in the art would not necessarily have combined Fukatsu's teachings with the previous art.

As to dependent claims 12, 14, 15, 17, 22-33:

These claims are dependent upon claims 8, 13, 18, 21, respectively, and thus are allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordany Núñez whose telephone number is (571)272-2753. The examiner can normally be reached on Monday Through Thursday 9am-7:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Bashore can be reached on (571)272-4088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2/25/2010  
JN

/William L. Bashore/

Supervisory Patent Examiner, Art Unit 2175